Notes.

The Royal Geographical Society and the Alpine Club for some time have been planning an expedition to scale Mount Everest. The political obstacle which stood in the way has now, fortunately, been removed by the permission granted by the Tibetan Government, on representation by the Government of India, for the expedition to pass through Tibet. Mount Everest, which lies on the borders of Tibet and Nepal, probably within the latter State, has an altitude of 29,142 ft. The surrounding mountainous country has never been explored, and, in consequence, much preliminary work is required before the actual ascent begins. In the *Geographical Journal* for January Brig.-Gen. the Hon. C. G. Bruce discusses the lines of approach and the probability of the feat being accomplished. The route proposed by Gen. Bruce is from Darjeeling through Sikkim to Kampa Dzong in Tibet, and then eastward for about 120 miles by the Taya Sampo Valley, through the Tingri Maidan, to the northern slopes of Mount Everest. This route he believes would enable a base to be established both as high as, and as near as possible to, Everest itself. It might be possible to arrange for supplies to be sent through Nepal up the Arun River or by other routes. This year an expedition is to make a preliminary reconnaissance of the ground, and in 1922 the actual attempt will follow. So far the highest altitude reached in mountain-climbing is 24,600 ft., attained by the Duke of the Abruzzi's party on Mount Godwin-Austen in 1909. Bad weather prevented a higher altitude being gained. Dr. Longstaff reached 24,000 ft. on Gurla Mandhata in 1905. In the ascent of Mount Everest an attempt will be made to push a camp to at least 25,000 ft., and, by use of ample porterage and the best of food, to have the climbing party in perfect fitness for the last effort.

An article in the *Pioneer Mail* of November 19 last "from a correspondent in Mesopotamia" throws doubt on the general optimistic estimates of the results that may be achieved there by irrigation. The difference between the former widespread fertility of the country and its recent barrenness is usually attributed to political influences; but the author considers that it is due to changes in the soil and in climatic conditions, and not to deterioration of the population. He explains the recession of the sea for 100 miles from Ur of the Chaldees by an upheaval which has so lowered the gradient that the irrigation of that area must prove unusually difficult. There appears, however, to be no trustworthy evidence of essential climatic change, and the retreat of the sea is probably due to silting. The arguments based on possible changes in the soil appear more weighty; the author holds that the good soil is limited to narrow strips beside the rivers, and that most of the land "may easily prove to be irreclaimable," as "a gigantic subsoil sea charged with salts" has slowly collected under the plains. He considers this waterlogging incurable by simple drainage as in India, owing to the lack of adequate slope. The conditions described in the article indicate that irrigation in Mesopotamia is a far more difficult undertaking than in India.

Sir Oliver Lodge's suggestions for the designation of the unit of positive electricity (Nature, December 9, p. 467), and Prof. Soddy's rejection of them, provide the theme for a humorous ode in *Punch* of January 12. The concluding lines are as follows:

"And then the bellicose and caustic Soddy,
Who treats Sir Oliver as if he were Poor Pillycoddy,
Or any ordinary hoddy-doddy,
Winds up with a sardonic observation
Upon the modern 'hydrophobic school,
With its inveterate aversion to anything wet;'
Showing that by a curious transmigration
The hate which theologians as a rule
Monopolised may now be met
In the most learned and exalted set
Of those whose scientific zeal and piety
Form the chief glory of the Roy'l Society."

It is typical of our ever-welcome contemporary to take a broad survey of individual and national characteristics, and to present them with knowledge as well as wit. We admire one and enjoy the other, and are flattered that correspondence in our pages should have provoked such sprightly verse. We trust, however, that the transference of the *odium theologicum* to scientific controversy will remain a fancy, even though Mr. Punch may thereby lose opportunities for his inimitable banter.

A society for scientific research into psychic phenomena has been formed in Glasgow, with Mr. A. J. Balfour as president. Other officers are as follows:—*Vice-Presidents:* Prof. W. Macneile Dixon, Sir George Beilby, Dr. A. K. Chalmers, the Duchess of Hamilton, Miss Janie Allan, Mr. J. Arthur Findlay, Mr. Peter Fyfe, Prof. R. Latta, the Rev. John Lamond, Dr. Neil Munro, Dr. L. R. Oswald, Lord Sands, Prof. W. B. Stevenson, and Dr. Henry J. Watt. *Chairman of Council:* Prof. W. Nacneile Dixon. *Vice-Chairman:* Mr. J. Arthur Findlay. *Hon. Librarian:* Dr. J. Knight. *Hon. Secretary:* Miss Margaret H. Irwin, 58 Renfield Street, Glasgow.

The short general account of the annual meeting of the Headmasters' Association published in last week's issue of Nature ascribed to Dr. Mary Bell the remark that "there is no sin in a child helping itself to the contents of the mother's purse in order to buy presents for a teacher." Dr. Bell writes to say that these words do not represent exactly what she said. The meaning she intended to convey was that "the impulse to gratify a self-regarding instinct by gaining recognition by giving flowers to a teacher might be so powerful as to outweigh any idea of stealing on the part of the child. The stealing is wrong, but the thing to tackle is the desire to gain recognition, or whatever it was that led to the giving of the flowers, without the wherewithal to do so."

A general meeting of the Association of Economic Biologists will be held at 2.30 p.m. on Friday, January 28, in the botanical lecture theatre of the

Imperial College of Science, South Kensington, S.W.1. Mr. Llewellyn Lloyd will describe greenhouse white-fly and its control, and Mr. W. B. Brierley will give his personal impressions of some American biologists and their problems. Mr. Brierley was one of three foreign representatives invited to attend the American Phytopathological Conference held last year, and afterwards visited the chief educational and research institutions in Canada and the United States and many geographical areas of botanical and agricultural interest.

THE Air Ministry has issued a table showing the numbers of aircraft of all nationalities which departed for and arrived from the Continent and the total numbers of passengers who travelled on Continental air services during the quarter October–December, 1920. The totals of departures and arrivals of aircraft to and from the Continent since the opening of the first service on August 26, 1919, until the end of 1920 were: Departures, 2131; arrivals, 2022; grand total, 4153. British machines contributed 3321 to the latter figure, French 721, Belgian 104, and other nationalities 7.

THE PRINCE OF WALES has expressed his intention of being present at the Hunterian festival dinner of the Royal College of Surgeons on February 14 to receive the diploma of honorary fellowship to which his Royal Highness was elected on July 24, 1919.

DR. ROBERT S. WOODWARD retired from the presidency of the Carnegie Institution of Washington at the end of last year, and the duties of that office have been assumed by Dr. John C. Merriam.

IN the December issue of *Man* Mr. J. J. S. Whitaker gives an account of recent archæological research at Motya which has been going on since 1906, and of which no information, except a few letters in English newspapers, has hitherto been procurable. Motya differs from its sister-cities in Sicily which have passed from one control to another and in course of time have undergone total transformation. Motya, once destroyed, ceased to exist as a town, and its site remained desolate. One remarkable discovery is that of a cemetery in which the burials are formed by single urns, the contents of which, so far as it has been possible to determine them, consist almost completely of the cremated remains, not of human beings, but of domestic and other animals. If this conclusion is verified it will raise a very interesting problem for the archæologist and anthropologist.

A COMMITTEE has been appointed to organise a presentation to Prof. Percy F. Kendall upon the occasion of his retirement from the chair of geology at the University of Leeds, which will take place under the age-limit in June next. As a teacher Prof. Kendall has been stimulating and successful; as a scientific worker he has shown himself possessed of a brilliantly original mind, and he has achieved especially notable work in glacial geology and in studies of coal and the coalfield. Some recognition of this work is richly earned. Sir William Garforth is the chairman of the presentation committee, and the treasurer is Mr. J. E. Bedford, of Arncliffe, Headingley, Leeds.

ENCEPHALITIS lethargica, a disease characterised by stupor and paralysis, which came prominently into notice in 1918, is stated to have made its appearance again in France. A number of cases are reported from Marseilles, and at Douai an epidemic is said to be raging. It is suggested that the malady is periodic in appearance, like influenza, and it is of interest that epidemics of stupors are again and again recorded by the old medical writers. Cases apparently cured seem to be subject to fresh attacks, and there is some evidence that the cured cases may be "carriers" of the virus and convey infection to others.

"ANILIN-VIOLET in Copying Pencils Acting as a Spreading Caustic" is the subject of a review in *Medical Science: Abstracts and Reviews* for December (vol iii., No. 3, p. 239). If the point of a violet copying pencil penetrates into and is broken off in the tissues the result is quite different from a similar accident occurring with an ordinary graphite lead pencil. If the removal of the violet point be delayed it slowly dissolves, and the area of tissue around undergoes sub-acute inflammation with irritation of the nerve-twigs and pain at first, followed by anæsthesia owing to destruction of the nerves. The tissues undergo necrosis or death, and finally a sinus leading to the surface forms, through which the violet-coloured debris is discharged. There is an absence of suppuration, as the anilin-violet is an antiseptic.

DRS. CALMETTE AND GUÉRIN, of the Pasteur Institute, Paris, state that they have been able to protect animals against tuberculosis by means of a vaccine. Ten healthy heifers, six of which were vaccinated, were housed with five tuberculous cows for thirty-four months and then slaughtered. Of the four unvaccinated heifers three showed advanced tuberculosis. Of the six vaccinated heifers two which had been vaccinated only once showed a small amount of tuberculosis, while the four other animals which had been vaccinated three times showed no trace of the disease. It is now proposed to experiment with apes, and for this purpose an island has been acquired in French Guinea and liberal grants have been made by the Government for building and equipping laboratories and for their upkeep. The vaccine referred to is probably that described by Dr. Calmette (*Ann. de l'Inst. Pasteur*, vol. xxxiv., 1920, p. 554), which consists of tubercle bacilli that have been grown on a glycerin-bile medium for several generations.

IN the *Journal of Anatomy* for October (vol. lv., part i., p. 68) Mr. G. S. Sansom describes observations on the parthenogenetic segmentation of the ovum of the water-vole (*Microtus amphibius*) within the ovary. The process continues as far as the formation of two blastomeres and the division of these so as to give rise to the four-celled stage. Conditions of atresia of the follicles then become so acute that further development is impossible.

ACCORDING to the *Scottish Naturalist* (November–December), a walrus was seen off the Shetlands on many occasions from early in July until the middle of October. When first seen, about twenty-four miles north-west of Lerwick, the animal followed a fishingboat for some distance. It is described by the lighthouse-keepers as bearing tusks about 15 in. long; it was almost black on the top of its head, but lighter about the rest of the head and back. This issue also contains an account of the breeding of the brambling in Perthshire, which makes the first authentic record of the breeding of this finch in the British Isles.

THE curious discovery of a diurnal variation in the size of human red-blood corpuscles is announced by Dr. Price Jones (*Journal of Pathology and Bacteriology,* vol. xxiii., p. 371). They are smallest on first waking in the morning, soon swell up when the subject becomes active, and reach a maximum about noon, which is maintained until bedtime. Short, violent exertion imposes a sudden rise on this daily curve, followed by a rapid return to normal; gentle exercise of longer duration has no special effect. Resting quietly in bed is evidently not the same as sleeping soundly, since it does not abolish the diurnal variation. Forced, violent breathing, whereby much carbon dioxide is washed out of the blood, causes a marked shrinkage, which disappears again in less than half an hour. The obvious inference that the size of the red cells varies inversely with the alkalinity of the blood is confirmed by experiments *in vitro*; but whether the phenomenon is due to the cells behaving like pieces of gelatin or to osmotic changes due to the exchange of salts between the plasma and cells is left undecided. It is possible that the increase of size in venous blood is of use in delaying the passage of the corpuscles along the pulmonary capillaries until the excess of CO_2 has been eliminated.

IN vol. v., part 8, of the Scientific Results of the Australasian Antarctic Expedition several kinds of insects from Macquarie Island are brought to light. Hitherto only a single species of springtail and two of shore-inhabiting flies were known from that desolate place. The present report, by Dr. R. J. Tillyard, is accompanied by appendices by Prof. C. T. Brues and Mr. A. M. Lea. Described therein are two new species of springtails, a new genus of wingless Diapriid Hymenoptera, and the larvæ and adults of a new Staphylinid beetle. It is noteworthy that the island contains no trees and the hillsides are clothed with dark green tussock grass, scattered among which are patches of the more brightly coloured Maori cabbage (*Stilbocarpa polaris*). Penguin "rookeries" are a striking feature of the island, and wherever they are present the vegetation is destroyed. The Collembola and the wingless Hymenopteron occurred under stones in these "rookeries," while among the great masses of kelp cast ashore during stormy weather various flies undergo their transformations. A Pyralid caterpillar and the larva and pupa of a Tipulid fly are also described in this report, without definite names being assigned to them. The occurrence of these few insects on this desolate island affords an interesting problem to students of geographical distribution.

A COMPLETE and up-to-date catalogue of all the species and subspecies of birds of the Nearctic and Neotropical regions from northern Greenland to Tierra del Fuego, including the West Indies, the isles of the Caribbean Sea, and those of the South Atlantic and Pacific Oceans the faunal relations of which are American, is attempted in the "Catalogue of Birds of the Americas," by Charles B. Cory (the Field Museum of Natural History, Chicago, Zoological Series, vol. xiii., 1918–19). The first instalments issued form vol. ii., those of vol. i. being held over in order that Mr. Cory may have the benefit of Prof. Ridgway's latest investigations on the aquatic and gallinaceous groups, which will appear in the concluding volumes of that author's great work on the birds of North and Middle America. The parts under notice deal with the forms comprised in the orders Strigiformes, Psittaciformes, Coraciformes, Trogones, Coccyges, Scansores, and Piciformes. The geographical distribution of each species and its racial forms, often numerous, is concisely given, also a short and judiciously selected series of synonyms—a very desirable adjunct in these days of never-ending changes in nomenclature, resulting in the disappearance of time-honoured names in favour of obscure dug-outs. Another important feature is the author's footnotes, devoted mainly to descriptions of the plumage of the many new species and still more numerous subspecies described since the publication of Prof. Ridgway's volumes, and of the American forms added to the great "Catalogue of the Birds of the World" published by the Trustees of the British Museum. Mr. Cory's work will be greatly appreciated by all who are engaged in the study of birds generally, and of their geographical distribution in particular.

THE inheritance of ten factors in the cow-pea (*Vigna sinensis*) has been studied by Dr. S. C. Harland (*Journal of Genetics,* vol. x., No. 3). The characters investigated included the presence of anthocyanin in stem and leaf-stalk, the colour of the seed-coat pattern, and pod and flower colour. The presence of anthocyanin is due to a dominant factor, while the seed-coat colours, which are black, brown, buff, maroon, red, and white, are believed to be due to various combinations of four factors. Several other relationships of factors are also made out. In another paper by the same author the results of breeding experiments with the castor-oil plant, *Ricinus communis,* are given. The presence of bloom on various parts of the plant is due to a single partly dominant factor, while the spininess of the capsule is also partially dominant to its absence. As regards stem colour, crosses between green and mahogany brown indicated the presence of two factors which show repulsion. Dr. Harland has also crossed certain varieties of the tropical hyacinth bean, *Dolichos lablab.* He finds the indeterminate habit of growth dominant to the determinate. Two white-flowered varieties gave a purple F_1, due to the presence of the factors C and R, the former producing a purplish seed-coat and stipular hairs, the latter, in the presence of C, converting white flower into purple, purplish seed-coat into black, and causing pigmentation at the nodes.

THE Oreodontidæ from Upper Eocene to Pliocene genera are reviewed by F. B. Loomis in a paper on *Ticholeptus* (*Merycochaerus*) *rusticus* (*Amer. Journ. Sci.,* vol. l., p. 281, 1920). The wealth and variety of material for the study of these artiodactyls, especially in Lower Miocene strata, and their peculiar limitation to American deposits render the diagram of their evolution useful to students of the mammalia.

BULLETIN 663 of the U.S. Geological Survey on "The Structural and Ornamental Stones of Minnesota," by Oliver Bowles, is effectively illustrated with coloured plates of polished specimens—a method of imparting information that in our islands has, we think, been left to private enterprise. A publication of this kind is obviously a distinct service to a community that also contributes liberally to research in the so-called "purer" branches of geology.

SOME broad features of Hawaiian petrology are dealt with by S. Powers in the *American Journal of Science* (vol. l., p. 256, 1920). The olivine nodules in the basalts are regarded as early products of differentiation brought up from lower levels, and the occasional trachytes that are described seem to be due to differentiation in local volcanoes after their connection with the main subterranean cauldron had been cut off. Useful maps are given of several of the islands.

ATTENTION may be directed to a very convenient glossary of the economic mineral productions of the United States published by the U.S. Geological Survey under the title of "Useful Minerals of the United States," Bulletin 624, a revision of Bulletin 585. This consists of two parts—the first a geographical index, in which the various States of the Union are given in alphabetical order, and under each the most important mineral productions of that State, also alphabetically arranged. The second part consists of a list of the names of some six hundred minerals in alphabetical sequence, in which the composition and general uses of each are given briefly, together with a list of the States in which it occurs in important quantities or in some noteworthy form. The work thus forms a very convenient index to the mineral production of the United States, and it would be a very great advantage if all important mining countries published lists on similar lines. The suggestion might with great advantage be followed by our Imperial Mineral Resources Bureau.

LIVERPOOL Observatory at Bidston, under the directorship of Mr. W. E. Plummer, has issued its report for the years 1917–19, which is published by the Mersey Docks and Harbour Board. It has not been found possible to issue annual reports as was the custom prior to the war. The signal-gun for time, which is for definite nautical purposes, was fired, without alteration for summer time, one hour after Greenwich mean noon. Seismological observations are regularly recorded, and in the tables published notes are made respecting the different phases. Temperature records in the reports are from thermometers mounted on the north side of the observatory; in former years, when observations were made from instruments mounted on the south side, the results gave too high a reading. There were 76 days in 1917 with no sunshine, 68 days in 1918, and 68 days in 1919. For wind velocity it is still assumed that the velocity of the wind is three times greater than that of the cups of the Robinson anemometer, although this factor is recognised as too large. The detailed daily meteorological observations are most complete, and a summary is given for the several months and for the year. The number of hours that the different winds blew during each day affords very useful information and is of great interest as associated with the varying character of the weather. There is much that can be followed with advantage at other subsidiary observatories.

VOL. XIV. of the Collected Researches of the National Physical Laboratory extends to more than 300 pages, and is devoted entirely to optics. Its characteristic feature is the aid it affords to the manufacturer of optical instruments, and of telescopes in particular. One of the fifteen papers reprinted is devoted to a description of the methods adopted at the Laboratory for the calculation of telescope objectives, and a second gives the corrections to the curvatures of the lenses of an objective when the glass of a new melt is not quite identical in refractive index with the glass previously used. Charts for assisting in the selection of suitable glasses for cemented doublets are given, and those cases in which the curvatures do not allow a doublet to be cemented are met by the substitution of a cemented triplet. In a paper devoted to refractometers of the critical-angle type, such as are used in commercial testing, it is pointed out how extensive the powers of these instruments are and how the actual instruments have in the past fallen short of the accuracy possible owing to mechanical defects. Modifications of the original Zeiss form of construction are suggested which, when the instrument is used with the proper precautions, should raise the accuracy considerably.

A MARKED degree of red sensitiveness in some "ordinary" gelatino-bromide plates was observed and recorded many years ago; it seems possible that the key to this unexpected result has been found by Mr. F. F. Renwick, who contributes a paper on "The Action of Soluble Iodides on Photographic Plates" to the January issue of the Journal of the Royal Photographic Society. Mr. Renwick finds that by treating a plate for a few seconds with a very dilute solution of potassium iodide there is really no fogging effect (as Dr. S. E. Sheppard stated about a year ago), but that the plate is rendered markedly orange and red sensitive. This he demonstrates by bathing an ordinary plate for from 15 to 60 seconds in a 1 in 20,000 potassium iodide solution, washing it with water and exposing it to a spectrum. This appears to be the first instance recorded of a colourless solution conferring colour sensitiveness. Mr. Renwick has tried a fair number of different salts, but so far has discovered only one other that acts similarly. Sodium or potassium cyanide in solution of a strength of one in from 2000 to 10,000 gives an exactly similar effect. The author leaves a theoretical discussion of these results to a future occasion.

THE investigation of soap solutions by Dr. McBain and his students at the University of Bristol has been continued by the demonstration that aqueous sodium oleate at temperatures between 0° C. and 25° C. can exist in any one of three forms: clear oily liquid sol, clear transparent elastic gel, or white opaque solid curd, all at one and the same concentration and temperature. Hitherto the last two types have not been differentiated; probably all previous communications dealt with soap curd, and some confusion has been introduced into the discussion of the nature of gels on this account. Soap sol and gel have been shown to be identical in all respects except elasticity and rigidity, which are characteristic of the gel form alone. A curd is a sol or gel from which nearly all the soap has been abstracted through the formation of white curd fibres of barely microscopic diameter. These researches, described in the December issue of the Journal of the Chemical Society, have important bearings on the theory of gels, and support the micellar view of Nägeli.

MESSRS. J. AND A. CHURCHILL announce for early publication a new edition—the eighth—of Lee's "Microtomist's Vade-Mecum." It has been prepared by Dr. J. B. Gatenby, who has had the collaboration of several other well-known biologists; thus Prof. Bayliss contributes a chapter on the theory of dyes and staining, Dr. Da Fano has recast the chapters on neurological methods, Dr. A. Drew has written a chapter on protozoological techniques, Dr. W. Cramer and the editor a section dealing with the fatty substances, the chapter on bone and teeth has been revised by Dr. J. T. Carter, and sections on mitochondria, Golgi apparatus, fat and yolk, chromatin, chromosomes and nucleoli, embryology, microchemical tests, colloid intra-vitam dyes, and tissue culture methods have been contributed by Dr. Gatenby.

WE have received a copy of the new edition of its catalogue of second-hand scientific instruments from the firm of Charles Baker, of 244 High Holborn, W.C.1. It is divided into twelve sections, each of which deals with a particular class of apparatus. Prominent sections are those devoted to microscopes, surveying instruments, physical apparatus of various types, and photographic material. That on microscopes contains some seventy items, ranging from single sliding-tube instruments to those carrying all the modern improvements. The firm has also a number of second-hand scientific books and periodicals for sale, including collections of various journals of microscopy and NATURE, vols. xxviii. to civ.

Our Astronomical Column.

APPROACHING RETURN OF PONS-WINNECKE'S COMET.—Among the periodical comets due to return this year that of Pons-Winnecke presents the most interesting possibilities. The comet will be near the earth at the time it arrives at perihelion at about the end of June or early in July next, and as its orbit lies very near that of the earth a meteoric shower seems highly probable.

The first abundant exhibition of meteors from this source appears to have taken place on June 28, 1916, when it was witnessed by Mr. W. F. Denning at Bristol, who pointed out in NATURE of July 27 of that year the significant resemblance of orbit between the meteors and Pons-Winnecke's comet.

The last return of the comet to perihelion occurred on September 1, 1915, and, the shower of meteors having been observed at Bristol ten months later, the stream must be fully 600,000,000 miles long. If the display should fail to be visible at the end of June next it should certainly return next year.

The radiant point is situated a few degrees north-east of the star Eta in Ursa Major, and the radiation appeared to be very diffused in June, 1916, so that it was difficult to ascertain the exact centre. In former years the comet of Pons-Winnecke was always sufficiently distant from the earth to escape contact of its materials with our atmosphere, but during the last half-century the planet Jupiter has materially disturbed its orbit, and brought that section near perihelion extremely close to the earth.

STELLAR PARALLAXES.—Yerkes Observatory Publications, vol. iv., part 3, contains parallaxes of fifty-two stars obtained photographically with the great Yerkes refractor by Mr. G. van Biesbroeck and Mr. H. S. Pettit. A yellow colour-filter was used, and the bright stars were cut down 6 mags. or thereabouts by a double rotating sector. The stars are partly fundamental ones, partly faint stars with large p.m. The following are some of the more interesting results:—Aldebaran 0·047″, Castor 0·059″, Procyon 0·307″, B.D. +67·552° 0·106″ (this is the first determination made for this star), Lal. 21185 0·382″, ζ Herculis 0·095″, Barnard's p.m. star 0·509″, and Vega 0·114″. The average probable error is 0·010″.

Two more Publications of the Allegheny Observatory (vol. v., Nos. 4 and 5) have been received, and contain parallaxes of eighty stars, many of them now determined for the first time. The average probable error is 0·008″. There are only two parallaxes exceeding 0·1″, viz. Pi II. 123 0·145″ and O.A.N. 21338 0·134″ (first determination). Other interesting stars are α Trianguli 0·045″, δ Cephei 0·006″, 54 Piscium 0·096″, β Andromedæ 0·033″, Furuhjelm's companion to Capella 0·071″ (this is easier to measure than Capella itself, and from the common p.m. the parallax must be appreciably the same), η Geminorum 0·016″, Lal. 33439 0·095″ (Adams and Joy found 0·087″ spectroscopically), and Pi XXIII. 218 0·092″.

CATALOGUE OF NOVÆ.—The Japanese *Astronomical Herald* for October, 1920, contains a very useful catalogue of novæ, giving their R.A. and decl. for 1900, the date of outburst, and other particulars. Tycho Brahe's star of 1572 is No. 1, and Mr. Denning's nova of last August No. 41. The average in the last thirty years has been just one per annum. The nova of 1885 in the Andromeda nebula and the other faint novæ recently detected in spiral nebulæ have not been included in the list. The galactic co-ordinates are given, and the distribution of novæ in the four quadrants is as follows:

Galactic Long.	No. of Novæ
0° to 90°	14
90° to 180°	8
180° to 270°	3
270° to 360°	16

The deficiency in the third quadrant does not seem to be explicable as a result of south declination, for there are practically as many stars south of the equator as north of it (twenty to twenty-one). There are fourteen stars south of decl. −20°, which is the full number to be expected in this zone, one-third of the whole sphere. Hence the unsymmetrical distribution gives some grounds for conjecturing that the galaxy may be nearer to us in the first and fourth quadrants.